

WHAT IS CLAIMED IS:

1. An oil supply structure for an engine cylinder head, the structure comprising:  
an oil chamber formed in said cylinder head to receive oil from a main oil  
5 gallery of a cylinder block at a lower portion of the cylinder head abutted on an upper  
portion of the cylinder block;  
a cam shaft journal oil passage branching from the oil chamber for lubricating a  
cam shaft journal part; and  
an oil supply passage branching from the oil chamber for operating a variable  
10 valve timing apparatus.
2. The structure as defined in claim 1, wherein the oil supply passage is an intake-  
side oil supplying passage branching from the oil chamber for activation of an intake-  
side variable valve timing apparatus.
- 15 3. The structure as defined in claim 1, wherein the oil supply passage comprises:  
an intake-side oil supply passage branching from the oil chamber for activation  
of an intake-side variable valve timing apparatus; and  
an exhaust-side oil supply passage branching from the oil chamber for  
20 activation of an exhaust-side variable valve timing apparatus.
4. The structure as defined in claim 1, wherein the oil chamber, as observed from a  
bottom of the cylinder head, is a groove formed along the longitudinal direction of the  
cylinder head, wherein the groove is centrally formed with a contraction part narrowed

in width thereof.

5. The structure as defined in claim 4, wherein:

the main oil gallery of the cylinder block is connected to a chamber influx part  
5 which is an inner side of the cylinder head relative to the contraction part of the groove;  
and

the cam shaft journal oil passage, the intake-side oil supply passage, and the  
exhaust-side oil supply passage are connected to a chamber efflux part, which is an  
external side of the cylinder head relative to the contraction part of the groove.

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6. The structure as defined in claim 3, wherein the intake-side oil supply passage  
and the exhaust-side oil supply passage respectively comprise:

a temperature sensor section so formed as to pass through an oil temperature  
sensor; and

15 a control valve section connected to the temperature sensor section for  
supplying the oil to an oil control valve.

7. The structure as defined in claim 6, wherein the temperature sensor section is  
slanted upwards from the oil chamber to a lateral surface of the cylinder head.

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8. The structure as defined in claim 6, wherein the control valve section faces the  
inner side of the cylinder head and is tilted from the temperature sensor section toward  
the cam shaft journal of the upper side of the cylinder head.

9. The structure as defined in claim 1, wherein the cam shaft journal oil passage comprises:

an intake-side journal part inlet section and an exhaust-side journal part inlet section each communicatively branched out to one intake-side journal part for supporting the intake-side cam shaft and to one exhaust-side journal part for supporting the exhaust-side cam shaft, in a state of being branched toward the upper side from the oil chamber;

an intake cam shaft section connected to the intake-side journal part inlet section for supplying the oil to another intake-side journal part which abuts on the intake-side cam shaft, through the inner side of the intake-side cam shaft; and

an exhaust cam shaft section connected to the exhaust-side journal part inlet section for supplying the oil to another exhaust side journal part which abuts on the exhaust-side cam shaft, through the inner side of the exhaust-side cam shaft.

10. The structure as defined in claim 9, wherein the intake-side journal part inlet section and the exhaust-side journal part inlet section communicate with the second journal part of the cylinder head.

11. The structure as defined in claim 9, wherein the intake cam shaft section and the exhaust cam shaft section respectively comprise:

bearing cap grooves longitudinally formed in the direction encompassing the intake cam shaft or exhaust cam shaft at a bearing cap so as to communicate with the intake-side journal part inlet section or the exhaust-side journal part inlet section,

influx through holes radially formed at the intake and exhaust cam shafts so as

to communicate with the bearing cap grooves,  
hollow parts each centrally and longitudinally formed at the intake and exhaust cam  
shafts so as to communicate with the influx through holes, and  
efflux through holes radially formed at the intake and exhaust cam shafts  
5 meeting another intake and exhaust-side journal parts for supporting the intake and  
exhaust cam shafts so as to communicate with the hollow part.

12. The structure as defined in claim 11, wherein the bearing cap groove is  
connected with the intake-side journal part inlet section or the exhaust-side journal part  
10 inlet section at the bottom side of a cap protrusive part formed at one side of the bearing  
cap, and is formed to enclose the intake cam shaft or exhaust cam shaft by detouring a  
periphery of a cap bolt hole of the bearing cap.

13. The structure as defined in claim 1, wherein the main oil gallery of the cylinder  
15 block further comprises an oil filter for filtering the oil furnished to the oil chamber.

14. The structure as defined in claim 13, wherein the oil chamber, as observed from  
a bottom of the cylinder head, is a groove formed along the longitudinal direction of the  
cylinder head, wherein the groove is centrally formed with a contraction part narrowed  
20 in width thereof, wherein the main oil gallery of the cylinder block communicates with  
a chamber influx part which is an inner side of the cylinder head relative to the  
contraction part of the groove, wherein the cam shaft journal oil passage, the intake-side  
oil supply passage, and the exhaust-side oil supply passage communicate with a  
chamber efflux part, which is an external side of the cylinder head relative to the

contraction part of the groove.

15. The structure as defined in claim 14, wherein:

the oil filter is mounted at an oil filter insertion part vertically formed from the  
5 upper side of the cylinder block to the main oil gallery of the cylinder block in the lower  
side direction; and

the oil filter insertion part is formed with a diameter contraction part for  
limiting an inserted depth of the lower side of the oil filter so as to be placed at the same  
flat surface as the lower surface of the cylinder head by inserting the upper end of the  
10 oil filter through the periphery of the chamber influx part.

16. The structure as defined in claim 1, wherein said variable valve timing  
apparatus includes an actuator for continuous variable valve timing.

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